

We claim:

size

1. A method of producing a nano-scale sensor comprising the steps of:

(a) depositing a first metal nano-strip on an electrical insulator substrate by means of a FIB (Focused Ion Beam) deposition process; and,

5 (b) depositing a second metal nano-strip on the same said substrate by mean of said FIB process in a partially overlapping fashion on said first metal nano strip to provide a sensing junction as said overlap.

2. The method of claim 1 wherein said substrate is partially coated with two separate electrical conductors.

10 3. The method of claim 1 wherein the said metal nano-strips include at least one of: W and Pt.

4. The method of claim 1 wherein the substrate is glass.

5. The method of claim 2 wherein the coating is a film of Al.

6. The method of claim 3 wherein the said metal nano-strips contain gallium.

15 7. A nano-scale sensor comprising in combination:

(a) separate nano-strips of W and Pt having a partial overlap with one another;

(b) an electrical insulator onto which said partially overlapped nano-strips are deposited;

(c) a first output electrode connected to the W nano-strip; and,

(d) a second output electrode which is electrically separate from the first output

5 electrode connected to the Pt nano-strip.

8. The sensor of claim 7 wherein said insulator is glass.

9. The sensor of claim 7 wherein at least one of said electrode includes: Al.

10. The sensor of claim 7 wherein the nano-strips of W and Pt contain gallium.

11. The sensor of claim 10 wherein said nano-strips are trimmed.

10 12. A nano-scale heater comprising in combination :

(a) an electrical insulator onto which a plurality of output electrodes are positioned:

(b) an electrical conductor connected to one of the output electrodes;

(c) nano-strips of electrical conductor connected to the output electrodes, wherein

said nano-strips being of alternative segments of two different FIB deposited metals and

15 electrically conducted with each other allows for imposing a voltage on said electrodes and provides the generation of heat.

13. The heater of claim 12 further comprising a substrate.
14. The heater of claim 12 wherein each of said electrodes are a thin film of aluminum.